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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,747	08/14/2001	Mohamed Megahed	00CON159PC-CIP3	2062

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EXAMINER

CRUZ, LOURDES C

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 09/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/930,747

Applicant(s)

MEGAHED ET AL.

Examiner

Lourdes C. Cruz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 1/2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,2,5-14,17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Selna (US 5640048).

Selna discloses (See cover fig.) a structure comprising: a substrate 52,54 having a top surface for receiving a die 12; a conductor (8B, left) being adapted for connection to a first substrate signal bond pad (10B, bottom left) and a second terminal (8A, left) of said conductor being adapted for connection to a first die signal bond pad (not labeled but inherently present); a printed circuit board 18 attached to a bottom surface of said substrate; at least one via (6B, right) in said substrate; said at least one via providing electrical connection between a second die signal bond pad and said printed circuit board.

Selna also discloses a structure wherein:

- Said die is a semiconductor die
- Said at least one via provides an electrical connection between a second substrate signal bond pad (8b, right) and said printed circuit board, wherein said second substrate signal bond pad is electrically connected to said second die signal bond pad

- Said second substrate signal bond pad is electrically connected to said second die signal bond pad by a bonding wire 24
- Said at least one via provides an electrical connection between said second die signal bond pad and a land (10B, right), said land being electrically connected to said PCB (through 14B)
- Said at least one via provides an electrical connection between a second substrate signal bond pad (8B, right) and a land (10B, right), wherein said second substrate signal bond pad is electrically connected to said second die signal bond pad, and wherein said land is electrically connected to said printed circuit board (Through 14B)
- Said second via comprises a thermally conductive material
- Said conductor is an inductor for having inductance associated with it
- See that said conductor (as indicated above) has a first terminal (point of connection) connected to said first substrate signal bond pad and said second terminal (point of connection between conductor and die) connected to said first die signal bond pad
- See that the conductor comprises a plurality (see plurality of vias shown) of via metal segments within said substrate

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-4,15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Selna.

See that Selna discloses all the structural limitations discussed above. However, Selna does not specifically describe substrate 18 being comprised of an organic/ceramic material. Failure of Selna to specifically disclose the material of which the disclosed substrate/PCB is made of is considered to suggest the use of materials known to be feasible for use for the claimed structure among semiconductor artisans. Ceramic/organic materials are among those feasible materials that are well known and widely used in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the well known PCB comprising well known and widely used organic/ceramic material for these are known among semiconductor artisans and Selna suggests their use. Also, see that the specification and description of the invention is not focused on these materials and that ceramic/organic materials in PCBs are not the claimed invention.

Double Patenting

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The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 18-33 and 58-66 of copending Application No. 09/713834 in view of Selna (US 5640048).

The above is a provisional obviousness-type double patenting rejection.

Claims 1-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of U.S. Patent No. US 6191477 in view of Selna (US 5640048).

The above Application and Patent fail to specifically disclose a conductor patterned on the top surface of the substrate, it being adapted for connection to a first substrate to the structures. Nonetheless:

It would be obvious to incorporate a conductor patterned on the top surface of the substrate (as taught by Selna); it being adapted for connection to a first substrate, to the structures in 09/713834 and in US

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6191477, since it would have been obvious to one of ordinary skill in the art at the time the invention was made that a conductive patterned in the surface of the substrate is necessary (also known and commonly used for connection between die and substrate). Additionally, substrates inherently have conductive traces patterned within and on them to enable connection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lourdes C. Cruz whose telephone number is 703-306-5691. The examiner can normally be reached on M-F 10-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Lourdes C. Cruz
Examiner
Art Unit 2827


Lourdes Cruz
September 24, 2002


JEROME JACKSON
PRIMARY EXAMINER